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IS 9515 (1980): Link V-Belts [PGD 31: Bolts, Nuts and Fasteners Accessories]

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IS : 9515 - 1980

Indian Standard

(Reaffirmed 2005)

SPECIFICATION FOR LINK V–BELTS

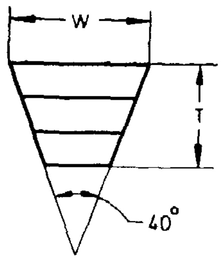
1. Scope — Lays down the requirements for link V-belts.

1.1 The link V-belts are for specific application particularly for fixed centre type applications which are not easily accessible and where conventional type of V-belts could not be used.

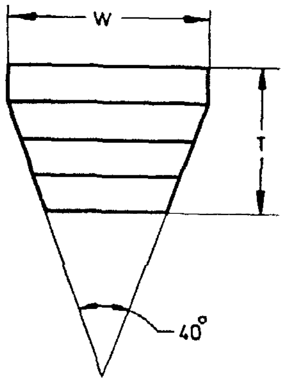
2. Terminology — *See* IS : 2494-1974 'Specification for V-belts for industrial purposes (*first revision*)'.

3. Dimensions

3.1 *Cross Section*



Cross-Section M, A, B & C



Cross-Section D

All dimensions in millimetres.

Cross Sectional Symbol	Nominal Top Width, *W*	Nominal Thickness, *T*
M	12	9·5
A	13·5	11
B	18	12·5
C	24	17·5
D	35	25·5

Note — The sections A, B, C and D may be used as replacement items for solid endless V-belts of section A, B, C and D conforming to IS: 2494-1974.

Pulleys and Belts Sectional Committee, EDC 42; V-Belts and Their Corresponding Pulleys Subcommittee, EDC 42:5 [Ref: Doc: EDC 42(2763)]

Adopted 26 May 1980

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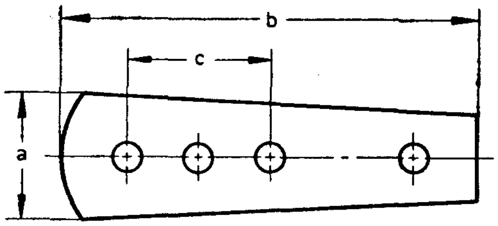
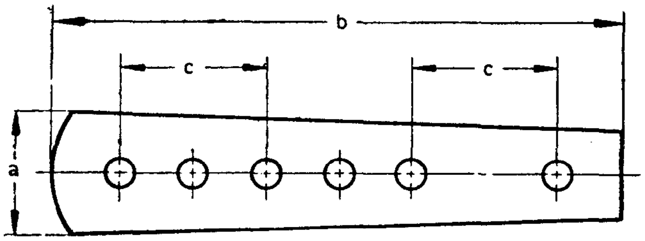
3.2 *Links*



FOR 3 LINK BELTING



FOR 4 LINK BELTING

All dimensions in millimetres.

Cross Section	*a*	*b*	*c*	No. of Plies	Belting
M	10	50	19	4	3 Link Belting
A	13	55	20·5	5	
B	17	60	22	6	
C	22	73	25	7	
D	32	90	38	10	
D	32	150	38	8	4 Link Belting

4. Material — The duck for the manufacture of belts shall conform to Type 18 of IS : 5996-1970 'Specification for cotton belting ducks'.

5. Construction

5.1 *Belting* — The belting shall be of multiple-link construction, assembled in lengths of 20 m±50 mm on metal or fibreboard reels. Links shall be manufactured from laminations of frictioned cotton duck. The duck shall be impregnated with natural or synthetic rubber.

5.2 *Fastening* — The fastening shall be strong enough to withstand the load for which the belting is made and properly secured in such a way that fastening shall not damage the pulley.

6. Designation — A link V-belt of cross section B having 3 links shall be designated as follows:

Link V-Belt B×3 IS : 9515

7. Power Ratings

7.1 For power ratings of link V-belts, reference should be made to the individual manufacturer's catalogue. For general guidance, however, the ratings given in Appendix A may be followed but, these ratings should not be taken as mandatory.

7.2 *Correction Factors for Arc of Contact* — As given in Appendix B.

7.3 *Load Factors* — As given in Appendix C.

7.4 *Corrected Power Per Belt*

Corrected power = Rated power(Appendix A) × Correction factor for arc of contact (Appendix B) × Load factor (Appendix C)

8. Tests

8.1 *Adhesion Test* — The adhesion between the plies shall be such that, when tested in the manner described in Appendix C of IS : 1370-1976 'Specification for friction surface rubber transmission belting (*second revision*)', the force required to cause separation of the plies shall be not less than 80·3 N per 25 mm width.

9. Packing — The belts shall be suitably packed as mutually agreed to between the purchaser and the supplier.

9.1 *ISI Certification Marking* — Details available with the Indian Standards Institution.

10. Marking — The link V-belts shall be marked legibly and durably on the top surface with the cross-sectional symbol and the manufacturer's name or trade-mark.

APPENDIX A

(*Clauses* 7.1 *and* 7.4)

POWER (kW) RATING TABLE (40° BELTS)

Nominal Size of Link Belt	Small Pulley Pitch Dia	Belt Speed in Metre per Minute						
(mm)	(mm)	150	300	460	600	760	915	1 070
10	50	0·15	0·30	0·37	0·52	0·60	0·60	0·60
	63	0·15	0·30	0·45	0·60	0·75	0·75	0·75
	75 (*N*)	0·15	0·37	0·60	0·75	0·82	0·90	0·90
	90 and over	0·22	0·45	0·67	0·90	0·97	0·97	1·05
12·5	63	0·22	0·37	0·60	0·75	0·75	—	—
	75	0·22	0·52	0·75	0·97	1·12	—	—
	90 (*N*)	0·30	0·60	0·90	1·19	1·42	1·57	—
	100 and over	0·37	0·67	0·97	1·27	1·57	1·79	1·94
16	112	0·45	0·82	1·19	1·57	1·87	2·09	2·31
	125 (*N*)	0·92	0·97	1·34	1·79	2·09	2·39	2·54
	150	0·67	1·12	1·64	2·09	2·54	2·91	3·21
	175 and over	0·75	1·34	1·87	2·39	2·91	3·36	3·66
19	175	0·82	1·49	2·16	2·76	3·36	—	—
	200 (*N*)	1·05	1·87	2·69	3·50	4·25	4·85	—
	225	1·12	2·09	3·13	4·10	4·93	5·67	—
	250 and over	1·19	2·31	3·43	4·55	5·45	6·34	—
22	200	1·19	2·24	3·28	4·18	5·00	5·60	—
	225 (*N*)	1·27	2·31	3·43	4·40	5·22	5·97	—
	250	1·34	2·46	3·58	4·70	5·60	6·49	7·24
	275 and over	1·42	2·54	3·66	4·78	5·67	6·57	7·31
25·5	225	1·34	2·39	3·66	4·63	5·52	—	—
	250 (*N*)	1·42	2·61	3·80	4·93	5·90	6·64	—
	275	1·49	2·76	4·03	5·22	6·19	6·87	—
	300 and over	1·64	3·13	4·48	5·67	6·57	7·24	—

Note — *N*=Recommended normal pulley sizes.

APPENDIX B

(*Clauses* 7.2 *and* 7.4)

CORRECTION FACTORS FOR ARC OF CONTACT

Arc of Contact	180°	175°	170°	165°	160°	155°	150°	145°	140°	135°	130°	125°	120°
Correction factors for reduction drives	1·0	1·01	1·02	1·04	1·05	1·07	1·08	1·1	1·12	1·14	1·16	1·18	1·2
Correction factors for speed-up driving	1·2	1·21	1·22	1·24	1·26	1·28	1·3	1·33	1·35	1·37	1·39	1·42	1·44

Note — Arc of contact $= 180^\circ \times \frac{60 \times (\text{Dia of large pulley—Dia of small pulley})}{\text{Centre distance}}$

APPENDIX C

(*Clauses* 7.3 *and* 7.4)

LOAD FACTORS

Type of Drive	*Load Factor*
Occasional full loads, lineshafts, normal industrial drives	1·0
Fans, Pumps, hot atmospheres, very short centre	1·1 to 1·2
Heavy drives, compressors, pulsating loads, drives from steam or internal combustion engines	1·3 to 1·5

EXPLANATORY NOTE

Link V-belts are generally used for inconvenient, inaccessible and awkward drives. These belts stretch in running condition and depending upon the different manufacturer's product the link belting could stretch up to 6 percent before break.

While preparing the standard assistance has been derived from ZZ-B-220a 'Belting, V, link impregnated cotton duck and metal studs', issued by American Federal Supply Service.

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